



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,531	06/23/2003	Katsura Nakajima	D-1507	5799

7590 06/15/2004
KANESAKA AND TAKEUCHI
1423 Powhatan Street
Alexandria, VA 22314

EXAMINER

BOUTSIKARIS, LEONIDAS

ART UNIT	PAPER NUMBER
----------	--------------

2872

DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/600,531

Applicant(s)

NAKAJIMA ET AL.

Examiner

Leo Boutsikaris

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 6/28/2002. It is noted, however, that applicant has not filed a certified copy of the said application as required by 35 U.S.C. 119(b).

Claim Objections

Claim 5 is objected to because of the following informalities:

Claim 5 refers to chromel layer, as well as to silicon dioxide and magnesium fluoride layers, which lack antecedent basis. For examination purposes it will be taken that claim 5 depends from claim 4.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunii (US 6,671,109) in view of Biznyuk (US 2003/0008136).

Regarding claim 1, 6-7, Kunii discloses an ND filter comprising a substrate 1 formed of a plastic sheet, e.g., PET, and a deposit film (2-6) formed on a surface of the substrate (Figs. 1-2, line 16, col. 4 to line 18, col. 5). Kunii's filter is made by depositing layers of metal oxides on the PET substrate in vacuum (see Fig. 2). Kunii does not specify the glass transition temperature of the PET substrate, other than saying that its temperature during the deposition process is 100 degrees (lines 19-22, col. 5). Biznyuk discloses a method of depositing a first polymer material on a polymer substrate, such as a PET layer. During the deposition process, the temperature of the PET substrate must be raised to a certain degree. Biznyuk teaches that whatever that substrate temperature during the deposition process is, it must be lower than the glass transition temperature of the PET substrate ([0008]-[0010], [0044]). It would have been obvious to one of ordinary skill in the art to choose a plastic material for the substrate for making the ND filter of Kunii, such that the plastic material has a glass transition temperature higher than the deposition temperature, as taught by Biznyuk, for avoiding changes in the physical properties of the substrate during the deposition process. Furthermore, it would have been obvious to one of ordinary skill in the art to choose the threshold for the glass transition temperature at 120 degrees for the plastic substrate, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235. Here, the prior art suggests that the glass transition temperature of the plastic substrate must be at least higher than 100 degrees. Choosing a threshold of 120 degrees represents a point, which is far enough from the deposition temperature to avoid phase change problems, yet not too high which would be difficult to accomplish for a plastic material.

Art Unit: 2872

Regarding claim 8, the ND filter of Kunii is used as part of an aperture device in a camera (Fig. 9).

Claims 1, 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa (JP 10-133253) in view of Biznyuk (US 2003/0008136).

Regarding claim 1, 6-7, Yoshikawa discloses an ND filter comprising a substrate formed of a plastic sheet, e.g., PET or PEN, and a deposit film (MgF_2 or SiO_2) formed on a surface of the substrate (Fig. 3). The filter is made by depositing the layers of metal oxides on the PET substrate in vacuum ([0010]). Yoshikawa does not specify the glass transition temperature of the PET substrate, other than saying that PET or PEN has a glass transition temperature, which is a factor in choosing the material ([0010]). Biznyuk discloses a method of depositing a first polymer material on a polymer substrate, such as a PET layer. During the deposition process, the temperature of the PET substrate must be raised to a certain degree. Biznyuk teaches that whatever that substrate temperature during the deposition process is, it must be lower than the glass transition temperature of the PET substrate ([0008]-[0010], [0044]). It would have been obvious to one of ordinary skill in the art to choose a plastic material for the substrate for making the ND filter of Yoshikawa, such that the plastic material has a glass transition temperature higher than the deposition temperature, as taught by Biznyuk, for avoiding changes in the physical properties of the substrate during the deposition process. Furthermore, it would have been obvious to one of ordinary skill in the art to choose the threshold for the glass transition temperature at 120 degrees for the plastic substrate, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges

Art Unit: 2872

involves only routine skill in the art. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235.

Choosing a threshold of 120 degrees represents a point, which is far enough from the deposition temperature to avoid phase change problems, yet not too high which would be difficult to accomplish for a plastic material.

Regarding claim 8, the ND filter of Yoshikawa is used as part of an aperture device in a camera (Fig. 1).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-8 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3, 6 of copending Application No. 10/600528. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are drawn to an ND filter comprising a norbornene resin substrate, with alternating Chromel and silicon dioxide layers deposited on top of the substrate, with a magnesium fluoride layer formed on top. It is noted that a norbornene

Art Unit: 2872

resin material has glass transition temperature of at least 120 degrees (see [0019] in specification).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Allowable Subject Matter

Claims 2-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, provided that the Double Patenting rejection set forth in this Office Action is overcome, and if claim 5 overcomes the objection set forth in the present Office Action.

Claims 2-5 are allowable over the prior art for at least the reason that even though the prior art discloses ND filters comprising plastic substrates with metallic or metal oxide layers deposited thereupon, the prior art fails to teach or reasonably suggest an ND filter comprising a wherein the plastic sheet has 0.5% or less of turbidity, as set forth by the claimed combination.

Amano (US 5,715,103, Fig. 6A) discloses an ND filter comprising a transparent substrate with metal oxide layers formed thereupon. Zhang (US 5,726,797, Fig. 2A) discloses an ND filter having a dielectric substrate and a film composed of an alloy of copper and nickel. Finally, Tuthill (US 3,897,140, Fig. 1) discloses a solar filter comprising a resin substrate having a metal layer formed thereupon. Finally, Yanagi (US 2004/0021967) discloses an ND filter made by vacuum deposition, where it is taught that PET is selected as substrate because of its high value of glass transition temperature ([0149]).

Art Unit: 2872

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Leo Boutsikaris whose telephone number is 571-272-2308.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Leo Boutsikaris, Ph.D.
Patent Examiner, AU 2872
June 13, 2004

A handwritten signature in black ink, appearing to be the initials 'LB' with a stylized flourish.